

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Hondo Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1229 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Used August 1, 2011
Submit one copy to appropriate
District Office

APR 23 2015

☐ AMENDED REPORT

RECEIVED

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015-43048	2 Pool Code 96610	3 Pool Name Empire; Glorieta Yeso East
4 Property Code 313320	5 Property Name BOSE IKARD 4 STATE COM	
6 Well Number 17H	7 Operator Name COG OPERATING, LLC	
8 Elevation 3601'	9 Elevation 3601'	

10 Surface Location									
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	4	17S	29E		840	SOUTH	150	WEST	EDDY

11 Bottom Hole Location If Different From Surface									
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	4	17S	29E		989	SOUTH	330	EAST	EDDY

12 Dedicated Acres 160	13 Joint or Infill	14 Consolidation Code	15 Order No.
----------------------------------	--------------------	-----------------------	--------------

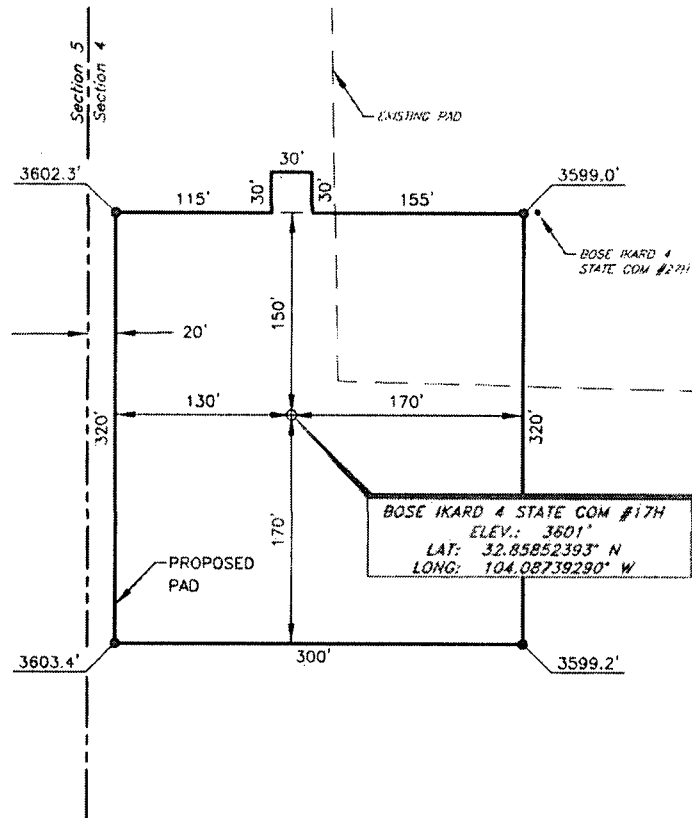
No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

LOT 4 40.00 Ac. (MSP 40.05 Ac.) RECORDING DATA NAD 27 GRID - NM EAST SURFACE LOCATION N 576130.2 - E 575521.4 LAT: 32.85852393° N LONG: 104.08739290° W BOTTOM HOLE N 576309.0 - E 580297.9	LOT 3 39.91 Ac. (MSP 40.00 Ac.) CORNER DATA NAD 27 GRID - NM EAST A: FOUND RED CAP "HOWETT PLS19680" N 575289.3 - E 575371.1 B: FOUND BRASS CAP "1914" N 577928.7 - E 575371.9 C: FOUND BRASS CAP "1914" N 580580.6 - E 575358.8 D: FOUND BRASS CAP "1914" N 580585.3 - E 577994.0 E: FOUND BRASS CAP "1914" N 580588.6 - E 580627.0	LOT 2 39.80 Ac. (MSP 39.93 Ac.) F: FOUND BRASS CAP "1914" N 577960.0 - E 580628.8 G: FOUND BRASS CAP "1914" N 575321.9 - E 580628.5 H: FOUND BRASS CAP "1914" N 575304.8 - E 577909.2 1: CALCULATED CORNER N 576609.0 - E 575371.5 2: CALCULATED CORNER N 576541.0 - E 580627.6	LOT 1 39.79 Ac. (MSP 39.88 Ac.)	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or is a voluntary pooling agreement or a compulsory pooling order enforced by the division. <i>[Signature]</i> Signature Kelly J. Holly Printed Name kholly@concho.com E-mail Address 4-22-15 Date
18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. 3-18-2015 Date of Survey <i>[Signature]</i> Signature and Seal of Robert M. Howett 19680 Certificate Number				19680 Certificate Number

RRC - Firm No.: TX 10193838 NM 4655451 - Job No.: LS1503085

4/23/15
AD

COG OPERATING, LLC
BOSE IKARD 4 STATE COM #17H
(840' FSL & 150' FWL)
SECTION 4, T17S, R29E
N. M. P. M., EDDY CO., NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of CR-214 (Barnaval Draw) and CR-211 (Old Loco)

Go West on CR-211 approx. 0.6 miles;

Turn left on lease rd. and go South approx. 0.4 miles to the Bose Ikard 4 State Corn #27H;

Location is approx. 235 feet to the Southwest of Bose Ikard 4 State Corn #27H.

SCALE: 1" = 100'
0 50 100
BEARINGS ARE
NAD 77 GRID - NM EAST
DISTANCES ARE
GROUND.

Firm No.: TX 10193838 NM 4655451

Copyright 2014 - All Rights Reserved

NO.	REVISION	DATE
JOB NO.:	LS1503085	
DWG. NO.:	1503085PAD	

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE:	1" = 100'
DATE:	3-18-2015
SURVEYED BY:	GB/JB
DRAWN BY:	CMJ
APPROVED BY:	RMH
SHEET :	1 OF 1

VICINITY MAP

NOT TO SCALE



BOSE IKARD 4 STATE COM #17H

SECTION 4, TWP. 17 SOUTH, RGE. 29 EAST,
N. M. P. M., EDDY CO., NEW MEXICO

OPERATOR: COG Operating, LLC

LEASE: Bose Ikard 4 State Com

WELL NO.: 17H

LOCATION: 840' FSL & 150' FWL

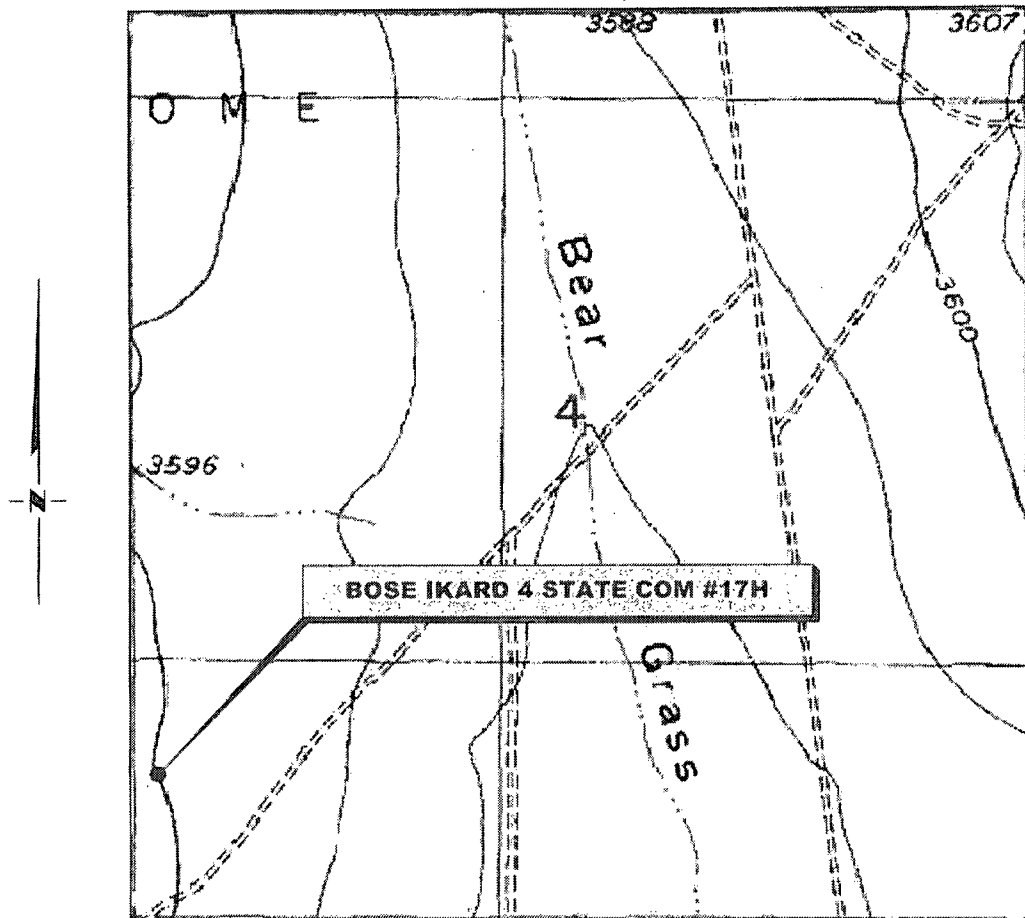
ELEVATION: 3601'

Firm No.: TX 10103839 NM 4655451

Copyright, 2015 - All Rights Reserved

RRC 308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200			SCALE: NTS
			DATE: 3-18-2015
			SURVEYED BY: GB/JB
			DRAWN BY: CMJ
NO.	REVISION	DATE	APPROVED BY: RMH
JOB NO.: LS1503085			SHEET : 1 OF 1
DWG. NO.: 1503085VM			

LOCATION VERIFICATION MAP



SECTION 4, TWP. 17 SOUTH, RGE. 29 EAST,
N. M. P. M., EDDY CO., NEW MEXICO

OPERATOR: COG Operating, LLC

LEASE: Bose Ikard 4 State Com

WELL NO.: 17H

ELEVATION: 3601'

LOCATION: 840' FNL & 150' FWL

CONTOUR INTERVAL: 10'

USGS TOPO. SOURCE MAP:

Red Lake SE, NM (1955)

Form No.: TX 1019JB38 NM 455451

Copyright 2015 - All Rights Reserved

NO.	REVISION	DATE
JOB NO.:	LS1503085	
DWG. NO.:	1503085LVM	

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'
DATE: 3-18-2015
SURVEYED BY: GB/JB
DRAWN BY: CMJ
APPROVED BY: RMH
SHEET : 1 OF 1



**COG Operating LLC
NEW MEXICO SHELF**

EDDY COUNTY, NM

EMPIRE

BOSE IKARD 4 STATE COM #17H

OWB

Plan: PWP0

SHL: 840' FSL, 150' FWL, SEC. 4, T17S, R29E, UNIT M

PP: 846' FSL, 330' FWL, SEC. 4, T17S, R29E, UNIT M

BHL: 989' FSL, 330' FEL, SEC. 4, T17S, R29E, UNIT P

Standard Planning Report

16 April, 2015



COG Operating LLC
Planning Report

Database:	EDM_Users	Local Co-ordinate Reference:	Well: BOSE IKARD 4 STATE COM #17H
Company:	NEW MEXICO SHELF	TVD Reference:	RKB=3601+12 @ 3613.0usft (TBD)
Project:	EDDY COUNTY, NM	MD Reference:	RKB=3601+12 @ 3613.0usft (TBD)
Site:	EMPIRE	North Reference:	Grid
Well:	BOSE IKARD 4 STATE COM #17H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Project:	EDDY COUNTY, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		EMPIRE			
Site Position:		Northing:	667,066.90 usft	Latitude:	32° 50' 0.822 N
From:	Map	Easting:	582,960.90 usft	Longitude:	104° 3' 47.669 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.15 °

Well	BOSE IKARD 4 STATE COM #17H					
Well Position	+N/-S	9,063.3 usft	Northing:	676,130.20 usft	Latitude:	32° 51' 30.686 N
	+E/-W	-7,439.5 usft	Easting:	575,521.40 usft	Longitude:	104° 5' 14.615 W
Position Uncertainty	3.0 usft		Wellhead Elevation:	0.0 usft	Ground Level:	3,601.0 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2005	12/31/2009	8.04	60.73	49,111

Design: PWP0				
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	87.86

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,629.1	0.00	0.00	3,629.1	0.0	0.0	0.00	0.00	0.00	0.00	
4,457.3	91.08	87.86	4,150.0	19.9	530.4	11.00	11.00	0.00	87.86	
8,707.1	91.08	87.86	4,070.0	178.8	4,776.5	0.00	0.00	0.00	0.00	PBHL-Bose Ikard 4 S



COG Operating LLC

Planning Report

Database:	EDM Users	Local Co-ordinate Reference:	Well BOSE IKARD 4 STATE COM #17H
Company:	NEW MEXICO SHELF	TVD Reference:	RKB=3601+12 @ 3613.0usft (TBD)
Project:	EDDY COUNTY, NM	MD Reference:	RKB=3601+12 @ 3613.0usft (TBD)
Site:	EMPIRE	North Reference:	Grid
Well:	BOSE IKARD 4 STATE COM #17H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,629.1	0.00	0.00	3,629.1	0.0	0.0	0.0	0.00	0.00	0.00
EST KOP, 3629.1' MD									
3,700.0	7.80	87.86	3,699.8	0.2	4.8	4.8	11.00	11.00	0.00
3,800.0	18.79	87.86	3,797.0	1.0	27.8	27.8	11.00	11.00	0.00
3,900.0	29.79	87.86	3,888.0	2.6	68.8	68.9	11.00	11.00	0.00
4,000.0	40.79	87.86	3,969.5	4.7	126.5	126.5	11.00	11.00	0.00
4,075.9	49.14	87.86	4,023.1	6.7	180.0	180.1	11.00	11.00	0.00
PP, 4075.9' MD									
4,100.0	51.79	87.86	4,038.5	7.4	198.6	198.7	11.00	11.00	0.00
4,200.0	62.79	87.86	4,092.4	10.6	282.5	282.7	11.00	11.00	0.00
4,300.0	73.78	87.86	4,129.4	14.0	375.2	375.5	11.00	11.00	0.00
4,400.0	84.78	87.86	4,147.9	17.7	473.3	473.6	11.00	11.00	0.00
4,457.3	91.08	87.86	4,150.0	19.9	530.5	530.8	10.99	10.99	0.00
EOC, 4457.3' MD, 4150' TVD, 91° INC, 87.86° AZI									
4,500.0	91.08	87.86	4,149.2	21.5	573.1	573.5	0.00	0.00	0.00
4,600.0	91.08	87.86	4,147.3	25.2	673.0	673.5	0.00	0.00	0.00



COG Operating LLC
Planning Report

Database:	EDM_Users	Local Co-ordinate Reference:	Well BOSE IKARD 4 STATE COM #17H
Company:	NEW MEXICO SHELF	TVD Reference:	RKB=3601+12 @ 3613.0usft (TBD)
Project:	EDDY COUNTY, NM	MD Reference:	RKB=3601+12 @ 3613.0usft (TBD)
Site:	EMPIRE	North Reference:	Grid
Well:	BOSE IKARD 4 STATE COM #17H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.0	91.08	87.86	4,145.4	28.9	772.9	773.5	0.00	0.00	0.00
4,800.0	91.08	87.86	4,143.5	32.7	872.9	873.5	0.00	0.00	0.00
4,900.0	91.08	87.86	4,141.7	36.4	972.8	973.4	0.00	0.00	0.00
5,000.0	91.08	87.86	4,139.8	40.2	1,072.7	1,073.4	0.00	0.00	0.00
5,100.0	91.08	87.86	4,137.9	43.9	1,172.6	1,173.4	0.00	0.00	0.00
5,200.0	91.08	87.86	4,136.0	47.6	1,272.5	1,273.4	0.00	0.00	0.00
5,300.0	91.08	87.86	4,134.1	51.4	1,372.4	1,373.4	0.00	0.00	0.00
5,400.0	91.08	87.86	4,132.2	55.1	1,472.3	1,473.4	0.00	0.00	0.00
5,500.0	91.08	87.86	4,130.4	58.9	1,572.2	1,573.3	0.00	0.00	0.00
5,600.0	91.08	87.86	4,128.5	62.6	1,672.1	1,673.3	0.00	0.00	0.00
5,700.0	91.08	87.86	4,126.6	66.3	1,772.1	1,773.3	0.00	0.00	0.00
5,800.0	91.08	87.86	4,124.7	70.1	1,872.0	1,873.3	0.00	0.00	0.00
5,900.0	91.08	87.86	4,122.8	73.8	1,971.9	1,973.3	0.00	0.00	0.00
6,000.0	91.08	87.86	4,121.0	77.6	2,071.8	2,073.2	0.00	0.00	0.00
6,100.0	91.08	87.86	4,119.1	81.3	2,171.7	2,173.2	0.00	0.00	0.00
6,200.0	91.08	87.86	4,117.2	85.0	2,271.6	2,273.2	0.00	0.00	0.00
6,300.0	91.08	87.86	4,115.3	88.8	2,371.5	2,373.2	0.00	0.00	0.00
6,400.0	91.08	87.86	4,113.4	92.5	2,471.4	2,473.2	0.00	0.00	0.00
6,500.0	91.08	87.86	4,111.5	96.3	2,571.4	2,573.2	0.00	0.00	0.00
6,600.0	91.08	87.86	4,109.7	100.0	2,671.3	2,673.1	0.00	0.00	0.00
6,700.0	91.08	87.86	4,107.8	103.7	2,771.2	2,773.1	0.00	0.00	0.00
6,800.0	91.08	87.86	4,105.9	107.5	2,871.1	2,873.1	0.00	0.00	0.00
6,900.0	91.08	87.86	4,104.0	111.2	2,971.0	2,973.1	0.00	0.00	0.00
7,000.0	91.08	87.86	4,102.1	115.0	3,070.9	3,073.1	0.00	0.00	0.00
7,100.0	91.08	87.86	4,100.2	118.7	3,170.8	3,173.1	0.00	0.00	0.00
7,200.0	91.08	87.86	4,098.4	122.4	3,270.7	3,273.0	0.00	0.00	0.00
7,300.0	91.08	87.86	4,096.5	126.2	3,370.7	3,373.0	0.00	0.00	0.00
7,400.0	91.08	87.86	4,094.6	129.9	3,470.6	3,473.0	0.00	0.00	0.00
7,500.0	91.08	87.86	4,092.7	133.7	3,570.5	3,573.0	0.00	0.00	0.00
7,600.0	91.08	87.86	4,090.8	137.4	3,670.4	3,673.0	0.00	0.00	0.00
7,700.0	91.08	87.86	4,089.0	141.1	3,770.3	3,772.9	0.00	0.00	0.00
7,800.0	91.08	87.86	4,087.1	144.9	3,870.2	3,872.9	0.00	0.00	0.00
7,900.0	91.08	87.86	4,085.2	148.6	3,970.1	3,972.9	0.00	0.00	0.00
8,000.0	91.08	87.86	4,083.3	152.4	4,070.0	4,072.9	0.00	0.00	0.00
8,100.0	91.08	87.86	4,081.4	156.1	4,170.0	4,172.9	0.00	0.00	0.00
8,200.0	91.08	87.86	4,079.5	159.8	4,269.9	4,272.9	0.00	0.00	0.00
8,300.0	91.08	87.86	4,077.7	163.6	4,369.8	4,372.8	0.00	0.00	0.00
8,400.0	91.08	87.86	4,075.8	167.3	4,469.7	4,472.8	0.00	0.00	0.00
8,500.0	91.08	87.86	4,073.9	171.1	4,569.6	4,572.8	0.00	0.00	0.00
8,600.0	91.08	87.86	4,072.0	174.8	4,669.5	4,672.8	0.00	0.00	0.00
8,700.0	91.08	87.86	4,070.1	178.5	4,769.4	4,772.8	0.00	0.00	0.00
8,707.1	91.08	87.86	4,070.0	178.8	4,776.5	4,779.8	0.00	0.00	0.00
PBHL, 8707.1' MD, 4070' TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL-Bose Ikard 4 State	0.00	0.00	4,070.0	178.8	4,776.5	676,309.00	580,297.90	32° 51' 32.341 N	104° 4' 18.612 W
- plan hits target center									
- Point									



COG Operating LLC
Planning Report

Database:	EDM_Users	Local Co-ordinate Reference:	Well BOSE IKARD 4 STATE COM #17H
Company:	NEW MEXICO SHELF	TVD Reference:	RKB=3601+12 @ 3613.0usft (TBD)
Project:	EDDY COUNTY, NM	MD Reference:	RKB=3601+12 @ 3613.0usft (TBD)
Site:	EMPIRE	North Reference:	Grid
Well:	BOSE IKARD 4 STATE COM #17H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWPO		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,629.1	3,629.1	0.0	0.0	EST KOP, 3629.1' MD
4,075.9	4,023.1	6.7	180.0	PP, 4075.9' MD
4,457.3	4,150.0	19.9	530.5	EOC, 4457.3' MD, 4150' TVD, 91° INC, 87.86° AZI
8,707.1	4,070.0	178.8	4,776.5	PBHL, 8707.1' MD, 4070' TVD